



Members of the 21<sup>st</sup> Century Infrastructure Commission,

The Michigan Townships Association and its members applaud Governor Snyder for establishing the 21<sup>st</sup> Century Infrastructure Commission to identify “long-term strategies to help ensure Michigan's infrastructure remains safe and efficient.” The Commission’s commitment to develop comprehensive short-term and long-term plans for transportation, water and sewer, wastewater treatment and drainage, energy, broadband and any other infrastructure components is appreciated—both the time and work involved with the numerous meetings, workgroups, and public hearings.

Comprehensive attention to replacing Michigan’s aging infrastructure and financing new infrastructure to meet contemporary needs is long overdue. Infrastructure systems are in a serious state of disrepair. And while the challenges facing the state are significant, the Commission’s work has the potential to improve the quality of life for communities left behind in the global economy, protect treasured natural resources and create prosperity opportunities for all of Michigan.

Rural poverty is a problem that has been overlooked in Michigan for generations—with more than 2.5 million people classified as rural poor residents. Many issues plaguing rural communities—poor public transportation, inadequate broadband access, public services for drinking water and updated sewer systems—all require infrastructure investment.

Creating good-paying jobs for all of Michigan remains an important state goal, but it will not happen in rural Michigan without local governments having access to capital to build transportation, fire protection and water infrastructure needed for advanced manufacturing, technology, agriculture processing facilities and tourist destinations. Aging septic systems that threaten water sources should be as much of a state policy concern as failing sewer systems, and financial assistance will need to be part of the solution for economically disadvantaged rural and urban communities lacking financial resources to self-fund new sewer systems.

Additionally, recent studies have concluded that Michigan residents and businesses pay more for energy than those in other states, and that is particularly true in rural areas where cheaper natural gas is unavailable. While the Pure Michigan campaign touts Michigan’s rural vistas and recreation areas, a recent study placed Michigan in the bottom five states for road trip destinations. Modest increases in road funding will soon be recognized, but highways, local roads and aging bridges will continue to be underfunded. Shrinking communities with oversized, aging water and sewer systems face the conundrum of too few customers to generate sufficient user fees at affordable rates to operate efficiently.

All these and more create a multitude of challenges for the Commission. MTA hopes the information outlined assists the Commission in its task to assess and prioritize current infrastructure needs throughout the state, both at the state and local level, including recommendations for better long-term planning and management and financing options for the next 30-50 years. Only with a sustainable infrastructure system—safer roads and bridges, accessible broadband and natural gas, safer water and sewer systems—will Michigan become a stronger and more economically viable state.



## **Water and Sewer Infrastructure needs**

Michigan's water and sewer infrastructure needs are immense. In the recent report *Michigan's Water Infrastructure Investment Needs* prepared by Public Sector Consultants, Inc., the drinking water investment gap between spending and investment needs is vast. Between 2004 and 2013, average annual investment for drinking water infrastructure was \$447 million compared to an estimated annual need of between \$713 million and \$1.01 billion until 2030. Drinking water infrastructure investment is being underfunded between \$284 and \$563 million per year. While the Flint water issue has been at the immediate forefront, it is a widely held opinion that the issues that community faces are but the tip of the iceberg of impending calamities resulting from long-term inattention to older infrastructure.

With respect to wastewater, the aforementioned report based on census data indicated that between 2004 and 2013, communities in Michigan spent on average \$691 million each year on wastewater and stormwater infrastructure needs combined. The EPA has estimated that Michigan's wastewater and stormwater investment need is approximately \$2.14 billion. However, because the survey was based on short-term needs rather than long-term costs, the estimate was significantly underreported making it more difficult to get a true estimate of the long-term wastewater infrastructure needed going forward.

The estimate above does not take into consideration on-site septic systems that service approximately 30 percent of the homes and businesses in Michigan. Estimates by the Department of Environmental Quality (DEQ) indicate that there are approximately 1.3 million septic systems in the state. Approximately 10 percent of those systems are "failing" causing harm to surface water bodies and potentially to ground water. Yet that figure may be just scratching the surface as counties that require septic tank inspections during real estate transactions (11 of 83) have reported a failure rate of between 20 and 25 percent.

According to DEQ data, Michigan residents pump about 264 million gallons of wastewater into septic and other on-site systems each day. Based on DEQ estimates, at least 10 percent of that wastewater is going into failing systems resulting in environmental degradation. Extrapolating the data over the course of one year results in 9.4 billion gallons of untreated wastewater flowing into failing systems. By comparison, DEQ data indicated that municipal wastewater treatment facilities discharged 7.8 billion gallons of raw sewage and another 21.6 billion gallons of partially treated sewage into lakes and rivers in 2011.

Septic systems affect both rural and suburban areas of the state. In 1990, 28 percent of single-family homes were utilizing septic systems based on state data. By 2004, 50 percent of all new homes were using septic systems to treat wastewater with that figure increasing in more recent years as the number of new homes built in rural areas has increased. While the EPA indicates that "adequately managed decentralized wastewater treatment systems are a cost-effective and long-term option for meeting public health and water quality goals, particularly in less densely populated areas" the key phrase in the EPA's response to Congress is that the systems must be adequately managed. Michigan remains the only state in the nation without some form of statewide sanitary code to ensure management and maintenance of these systems.



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In order to preserve Michigan’s surface water and ground water, failing septic systems must be either maintained or replaced. The DEQ has documented over \$1 billion in on-site wastewater treatment system needs over a 20-year period. The responsibility of correcting this problem will either fall on individual property owners, many of whom can ill afford such a capital investment or to municipalities to install sewer systems to replace the on-site systems. Whether its individuals or cash strapped communities, in order to correct the problem, either will likely need state and/or federal assistance to make it happen.



## Broadband Connectivity in Rural & Suburban Michigan

Broadband connectivity is vitally important in today’s technical world. It is crucial for economic development, education and job training. The Michigan Public Service Commission (MPSC) describes the importance of connected communities in the following way: “Technology, especially widespread access, use, and adoption of broadband, improves all areas of life. Access to broadband brings economic, educational and social benefits to communities, the citizens, and also the businesses that are located in those communities.” Research has also illustrated that individuals working in microbusinesses who move to rural areas to start businesses are making significantly greater contributions to rural employment per capita. However, many communities, especially rural areas, are vastly underserved due to the broadband deployment deficiencies in Michigan--putting residents and businesses at an unfair disadvantage.

With the securitization of two federal grants awarded in 2009 and 2010, the MPSC partnered with Connect Michigan to launch a comprehensive broadband mapping and planning initiative. The focus of the initiative was to map and increase access to broadband and to assist in economic development efforts.

The Connect Michigan mapping process began in 2009 to determine the level of access to broadband service for Michigan households and businesses and to determine the online speed of the service. As recent as 2010, the National Broadband Plan called for a speed target for households and small businesses of 4 Mbps download/1 Mbps upload. Mbps refers to broadband speeds as measured in megabits per second with a megabit representing a million tiny units of data. The higher number of Mbps, the faster the online activity. The National Broadband Plan further recommended the Federal Communications Commission (FCC) reassess the target level every four years. In early 2015, the FCC adjusted the definition of “advanced broadband” to 25 Mbps download/3 Mbps upload.

A FCC 2015 Broadband Progress report found that deployment of high-speed Internet in the United States, particularly in rural regions, was not keeping up with the current needs such as “high-quality voice, data, graphics and video offerings.” The same situation is true in the state of Michigan, especially as it pertains to rural areas and the Upper Peninsula. The table below highlights those counties identified by Connect Michigan as falling below 40 percent of households with service of  $\geq$  25 Mbps download/3 Mbps upload speeds.

County	Percentage $\geq$ 25 Mbps
Barry	28.35
Iron	15.68
Lake	1.00
Luce	1.30
Mackinac	38.23



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Missaukee	31.27
Montmorency	0.74
Oceana	39.56
Osceola	29.85
Oscoda	4.63
Presque Isle	30.09
Sanilac	0.00

While Michigan has gained increased access and competition among higher broadband speed tiers, nearly 12 percent of all state households are unserved by broadband providers with 25 Mbps/3 Mbps. This represents 456,452 total households statewide. Significant gaps still occur across Michigan, especially in rural areas. In addition, the demand for increased speed by individuals and businesses continues to outpace the ability to make it available in many parts of the state.

Increased availability to high-speed Internet service in rural areas is vital for our farmers, teleworking, and education. Thriving agriculture is essential for Michigan’s prosperity, and it too increasingly requires high speed broadband access. Farmers increasingly need to access the Internet for daily operations and marketing purposes. A 2012 Connect Michigan example is a case in point. Connect Michigan was able to bring high-speed Internet service to the Plank Farm (Montcalm County), which hosts the Michigan Cattleman’s Association/MSU Bull Evaluation Program. The Plank Farm serves as the region’s premier bull appraisal program and hosts a bull sale in March of each year. High-speed broadband provided an opportunity to greatly expand their buyer base to cattlemen across the United States. The result was to transition from a locally dependent business to nationally competitive operations.

High-speed Internet also allows those who are self-employed and rely on technology to work out of their homes to remain in Michigan rather than be forced to seek employment elsewhere. As of 2013, approximately 1.16 million Michigan residents took advantage of the Internet to sell goods or services through home-based businesses. Ensuring high-speed broadband remains or becomes available is vital to making high-paying jobs available to Michigan residents. Working from home provides an emerging opportunity to Michiganders. This teleworking model allows our citizens to work across the state or across the globe. As of 2011, nearly one in five employees (or 19 percent) work from home instead of commuting.

In many cases, job creation and retention is dependent upon access to high-speed Internet service. It is estimated that just a one percent increase in broadband accessibility could create or save approximately 12,388 jobs statewide. Investment in broadband infrastructure has yielded positive economic development returns. A study by the Mobile Technology Association of Michigan and the Michigan



Economic Development Corporation indicated “every mobile-related job that is created in Michigan creates 3.9 additional non-mobile related positions in the state.”

Broadband is also critical for educational purposes—it is no longer an entertainment luxury but is essential for global economic competitiveness and high education attainment for Michigan’s school students. When residents have broadband access, they have opportunities to expand their technical skills through online training. This can be especially helpful for workers who have lost their jobs and need online training to obtain new positions. Availability of broadband in rural areas of our state also allows children living in these areas the same educational opportunities and attainment as others across the state and nation.

In developing countries, broadband deployment has paid huge dividends in economic growth. Yet many Michigan rural residences and businesses have no high speed internet connectivity, and even suburban communities have substantial underserved areas.

The availability of ensuring high-speed internet access to every area of our state is critical for economic, social and educational purposes. With future commitment and investments, Michigan can continue to see growth and offer additional benefits for economic prosperity which are essential to safeguard Michigan’s future competitiveness in the global economy.



## Critical Bridge Infrastructure Imperative

For decades, Michigan’s roads and bridges have slid into a serious state of disrepair. Our state boasts endless stretches of majestic, heavily forested and lakeside roads, yet keeping those roads and bridges safe for drivers to predictably travel has been a major challenge. Michigan should be a national road trip destination given its unrivaled beauty. However, one personal finance website recently named Michigan the fifth worst state in the country for summer road trips. It’s a sad irony that visitors seek “Pure Michigan,” while its drivers spend an average of \$866 each year on vehicle repairs due to poor roads and bridges. Potholes and decaying infrastructure are everywhere. While a road may still be passable even with a large pothole, an unsafe bridge is not. Critical bridge infrastructure is imperative for safe travel and must be addressed, both in urban and rural areas.

According to the Federal Transportation Administrations National Bridge Inventory, Michigan has 1,122 structurally deficient bridges and 1,288 functionally obsolete bridges. Structurally deficient bridges have a significant defect that doesn’t always require a closure and may require repair, replacement, or a weight restriction. A functionally obsolete bridge is not suited for the intended purpose using modern design standards but is still usable. For example, the Mackinac Bridge has narrow lanes and higher volumes of anticipated traffic flow, but it is still usable. **Roughly 10 percent of all bridges in Michigan are structurally deficient, which ranks worst among Great Lakes states and 16<sup>th</sup> highest in the nation.**

Ensuring that the bridges are safe in Michigan is critical, and the task of overseeing that process goes to the Michigan Department of Transportation (MDOT) which spends approximately \$3.5 million each year inspecting state trunkline bridges. In addition to spending more than \$9 million each year reacting to maintenance situations as they arise, MDOT has spent on average over the last three completed fiscal years \$36 million providing capital preventative maintenance on bridges, \$33 million rehabilitating bridges, and \$174 million replacing bridges. MDOT estimates that this funding will prevent its roads from getting worse, but it will not improve them.

Every two years, each bridge—both local and state—is inspected and rated by an MDOT bridge inspector pursuant to federal requirements. This rating determines which bridges will receive state funding under the PA 51 formula.

Critical bridges are scored and ranked regionally based upon their traffic volume, the severity of their damage, and cost. In FY 2017, each of the 10 prosperity regions in Michigan received between \$5-8 million for local bridges using the criteria of the formula. Gauging by the long list of bridges, the current funding level is barely keeping our bridges above water, and additional consideration is needed to fund bridge infrastructure improvements through bonding or additional revenue.

Recognizing that Michigan’s bridge infrastructure is in critical need of help is the first step in improving the road and bridge infrastructure in Michigan. While additional federal and state dollars going towards roads and bridges will be a step in the right direction, it will not be a final solution. As Michigan seeks to address its infrastructure, roads and bridges should be at the top of the list of issues. Rural bridges should not be forgotten due to the remote geography of those areas.



## **Need for Greater Access to Natural Gas**

Natural gas is becoming the commodity (natural resource) of choice for producing Michigan's electricity needs as well as heating our homes and businesses across the state. Recent years have seen the cost of natural gas decrease significantly as supply has increased from shale production across North America. Michigan receives its natural gas from gas fields located in Michigan's Lower Peninsula, the Texas-Oklahoma Panhandle, on and off-shore Louisiana, and Alberta, Canada. Natural gas produced in Michigan—approximately 148 billion cubic feet—represents between 15-20 percent of all natural gas consumed in our state. However, many Michiganders and Michigan businesses don't have access to this inexpensive fuel and must rely on more costly alternatives.

As of 2010, approximately 22 percent of Michigan households were not utilizing natural gas for heating purposes. This represents approximately 850,000 Michiganders. Further, many rural businesses don't have access to natural gas. The majority of the homes and businesses not utilizing natural gas rely on propane, which costs significantly more. Meanwhile, low natural gas prices are expected to last for the foreseeable future. According to its 2014 report, the U.S. Energy Information Administration projects natural gas to stay 40-50 percent more cost effective than propane through 2040.

Propane costs rose substantially during the 2013-14 winter season across the state due to a supply shortage. Residential propane rose from an average price of \$2.46 per gallon in late December of 2013 to \$3.61 in less than a month. Some reports had propane prices as high as \$6.29 per gallon in some parts of the state. In January 2014, Governor Snyder declared an energy emergency, which suspended state and federal regulations on the number of hours and the consecutive days drivers can operate commercial vehicles delivering propane. Several issues contributed to the problem, including subzero temperatures, heavy snowfall, propane pipeline disruptions and shutdowns, and farmers using more propane than usual during the wet fall of 2013 to dry crops. During the 2013-14 propane crisis, customers were asked to dial down their thermostats 5-10 degrees and cut back on using propane fueled hot water heaters and ovens. Increased access to natural gas would mitigate market volatility and significantly reduce the risk of diminished supply.

Yet, propane is still used to heat more homes in Michigan than any other state. Additional infrastructure efforts are necessary to bring natural gas into underserved and unserved areas.

The benefits of natural gas over propane include providing a secure line of energy with less reliance on weather conditions, a lower fuel cost, and opportunities for economic development. Farming operations would benefit significantly through the introduction of natural gas in underserved and unserved areas to ensure access to forms of energy that are consistent, reliable, and affordable. Additional connectivity would allow agricultural processors a cheaper form of energy and support the overall growth of the agricultural industry in the state. Natural gas availability would also help other rural businesses reduce their current dependence on high-cost fuel and become more competitive. Lower heating costs would provide many businesses with a stronger incentive to invest, expand, and provide jobs in Michigan.



The expansion of natural gas lines into underserved and unserved rural areas would also provide an economic benefit to homeowners. According to figures supplied by Holly Bowers with Consumers Energy in June 2015, a typical single-family home could see an annual savings of around \$1,740 when compared with average propane prices over the 2014-2015 heating season. Savings of this magnitude would provide homeowners with additional disposable income to help Michigan's economy.

Michigan must adjust its policies to help bring natural gas to our underserved and unserved residents and businesses. The challenge to provide natural gas availability is the infrastructure costs to build and expand the pipelines into rural areas. However, the initial pipeline infrastructure costs will likely be more than offset by economic growth and development opportunities.